## DEPARTMENT of ENVIRONMENTAL SERVICES Water Supply & Pollution Control Division - Biology Bureau

### LAKE TROPHIC DATA

## MORPHOMETRIC:

Lake: MCCUTCHEON POND		Lake Area (ha):	3.52
Town: DORCHEST	ER	Maximum depth (m):	9.5
County: Grafton		Mean depth (m):	2.5
River Basin: Merrimac	k	Volume (m³):	88500
Latitude: 43°49'25	'' N	Relative depth:	4.5
Longitude: 71°59'53	'' W	Shore configuration:	1.23
Elevation (ft):	1978	Areal water load (m/yr):	6.44
Shore length (m):	820	Flushing rate $(yr^{-1})$ :	2.60
Watershed area (ha):	32.2	P retention coeff.:	0.61
<pre>% watershed ponded:</pre>	0.0	Lake type: no	atural

BIOLOGICAL:	11 February 1997	19 August 1996
DOM. PHYTOPLANKTON (% TOTAL) #1	SPARSE - NO DOMINANT	MOUGEOTIA 80%
#2		DINOBRYON 8%
#3		ASTERIONELLA 5%
PHYTOPLANKTON ABUNDANCE (units/mL)		
CHLOROPHYLL-A (µg/L)		1.26
DOM. ZOOPLANKTON (% TOTAL) #1	KERATELLA>99%	KERATELLA 78%
#2	(ZOOPLANKTON SPARSE)	NAUPLIUS LARVA 7%
#3	(ONLY KERATELLA OBSERVE	))
ROTIFERS/LITER	8	156
MICROCRUSTACEA/LITER	<1	23
ZOOPLANKTON ABUNDANCE (#/L)	8	184
VASCULAR PLANT ABUNDANCE		Sparse
SECCHI DISK TRANSPARENCY (m)		5.2
BOTTOM DISSOLVED OXYGEN (mg/L)	0.2	0.0
BACTERIA (E. coli, #/100 ml) #1		< 1
#2		
#3		

## SUMMER THERMAL STRATIFICATION:

## stratified

Depth of thermocline (m): 5.5 Hypolimnion volume  $(m^3)$ : 2000 Anoxic volume  $(m^3)$ : 2150

CHEMICAL:			MCCUTCHEO DORCHESTI		
	11 Febru	uary 1997	19 1	August 199	96
DEPTH (m)	3.0	6.0	1.0	5.0	8.0
pH (units)	5.2	5.2	5.3	5.0	5.6
A.N.C. (Alkalinity)	0.4	1.6	0.5	0.1	3.1
NITRATE NITROGEN	< 0.05	< 0.05	< 0.05		< 0.05
TOTAL KJELDAHL NITROGEN	0.45	0.59	0.20	0.19	0.67
TOTAL PHOSPHORUS	0.006	0.089	0.005	0.006	0.023
CONDUCTIVITY (µmhos/cm)	19.0	20.7	15.9	17.0	22.8
APPARENT COLOR (cpu)	25	25	10	15	40
MAGNESIUM			0.17		
CALCIUM			< 1.0		
SODIUM			< 1.0		
POTASSIUM			< 0.40		
CHLORIDE	< 2	< 2	. < 2		< 2
SULFATE	3	3	3		3
TN : TP	75	7	40		29
CALCITE SATURATION INDEX					

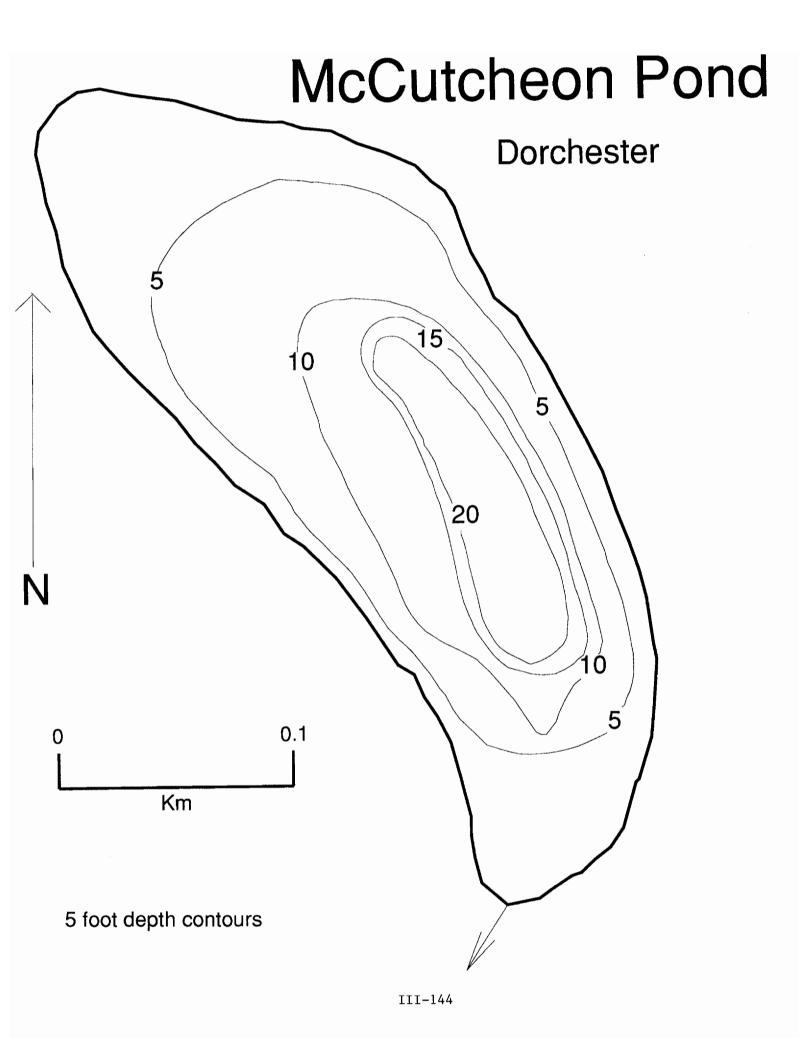
All results in mg/L unless indicated otherwise

## TROPHIC CLASSIFICATION: 1996

D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
4	1	0	0	5	Oligo.

## **COMMENTS:**

- 1. This is a clear water, remote, acid pond with almost no buffering capacity (A.N.C.) and very low ion levels.
- 2. Phosphorus levels and algal and macrophytic growth were low; most of the trophic points were due to the dissolved oxygen depletion in the bottom waters. Bottom oxygen levels were also low under the ice.



### FIELD DATA SHEET

LAKE: MCCUTCHEON POND TOWN: DORCHESTER

DATE: 08/19/96 WEATHER: SUNNY, BREEZY, RIPPLES

0.1 1.0 2.0 3.0 1.0 5.0 5.0	22.0 22.0 21.8 21.0 19.8 15.4	8.7 8.8 8.8 8.6 7.2	98 99 97 95	8
2.0 3.0 4.0 5.0	21.8 21.0 19.8	8.8	97	
3.0 1.0 5.0	21.0	8.6		8
1.0 5.0 5.0	19.8		95	
5.0		7.2		8
5.0	15.4		77	8
		6.2	61	ક્ષ
7.0	10.8	4.4	39	ક
	6.6	0.0	0	ક
3.0	6.0	0.0	0	8
9.0	6.8	0.0	0	8
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was a suppose many				
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		211/21/21/21/21		
		444444		

SECCHI DISK (m): 5.2

**COMMENTS:** 

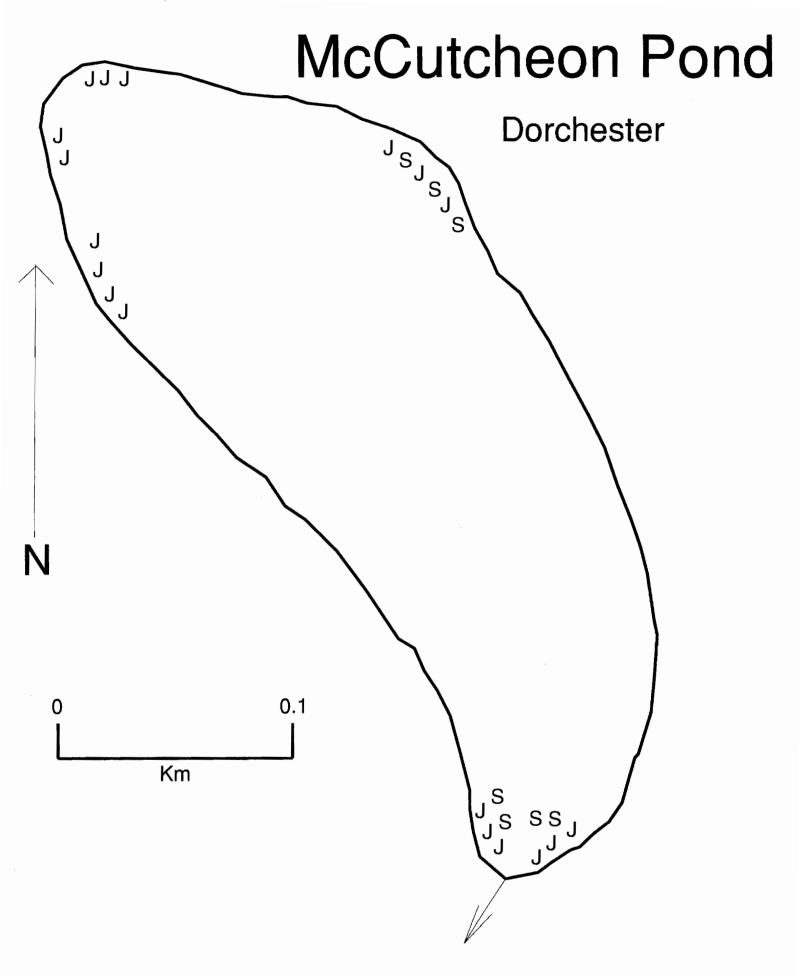
BOTTOM DEPTH (m): 9.5

The entire hypolimnion was

1200 TIME:

devoid of dissolved oxygen.

\*Dissolved oxygen values are in mg/L



# AQUATIC PLANT SURVEY LAKE: MCCUTCHEON POND TOWN: DORCHESTER DATE: 08/19/96 PLANT NAME Key **ABUNDANCE GENERIC** COMMON J Juncus Rush Sparse F Nymphoides cordatum Floating heart Sparse S Sparganium Bur reed Sparse OVERALL ABUNDANCE: Sparse

### **GENERAL OBSERVATIONS:**

- 1. The filamentous green alga *Mougeotia* covered the bottom of the pond. *Mougeotia* also dominated the sparse phytoplankton community as fragments of the filaments break off and float in the water column.
- 2. Although floating heart was observed, none were located on the map.